

## UNITED STATE DEPARTMENT OF COMMERCE Patent and Trademark Office Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231

CONTROL OF PATENTS AND TRADEMARKS  This application has been examined Responsive to communication filled on This action is control of the statutory period for response to this action is set to expire Month(s), days from the date of this let after to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133  art 1 THE FOLLOWING ATTACKMENT(S) ARE PART OF THIS ACTION:  1. Notice of References Cited by Examiner, PTO-892. 2. Notice of Draftsman's Patent Drawing Review. 3. Notice of Art Cited by Applicant, PTO-1449. 4. Notice of Information on How to Effect Drawing Changes, PTO-1474. 5. Information on How to Effect Drawing Changes, PTO-1474. 6. Are pending in the same are withdrawn from constant and are allowed. 7. Claims are allowed. 7. Claims are application are rejected. 8. Claims are application are application are application are application.			
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are rejected.  Claims	3 Claims		are allowed.
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are objected to.  Claims			are rejected.
are subject to restriction or election require  7. This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.  8. Formal drawings are required in response to this Office action.  9. The corrected or substitute drawings have been received on	· · ·		are objected to.
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12. Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has been received not been been filled in parent application, serial no	10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on	nas (nave) been	Tabbroved by the
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**EXAMINER'S ACTION** 

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Serial Number: 08/157,375

Art Unit: 2603

A. Receipt is acknowledged of papers submitted under 35 U.S.C.

- § 119, which papers have been placed of record in the file.
- B. The drawings are objected to because boxes 8 and 9 in Figures 4 and 5 need descriptive legends. Correction is required.
- C. Applicant is required to submit a proposed drawing correction in response to this Office action. However, correction of the noted defect can be deferred until the application is allowed by the examiner.
- D. The serial number missing from page 10, line 20 should be supplied.
- E. Claims 1-21 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The way lines 10-13 of claim 1, lines 8-11 of claim 2 lines 7-10 of claim 8 and lines 3-6 of claim 14 are written, in the absence of any multipath, the transmission times would have to be infinitesimally short, i.e. zero. The last 5 lines of each of these claims is written like a method claim and do not restrict any specific element. Is the transceiver powered by the computational device or not? "Able to be" powered is indefinite. Does the computational device have any power? Claims 3-5 lack any means to perform the additional function or steps. There is no modulation in claims 5 or 1 for

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Serial Number: 08/157,375

Art Unit: 2603

the modulation of claim 6 to have antecedence. Claims 3, 7, 9, 13, 17 and 21 are improper markush groups. Claims 14-16 appears to be single element or single means claims. The claims recite the reciprocal of the bit rate being short relative to the time delay differences in the multipaths but this assumes bit rate is somehow equated to transmission time as on page 12 of the specification. The bit rate could be high or low and still not produce the required transmission period.

F. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

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Claims 1-3, 5-9, 11-15, 17 and 19-21 are rejected under 35 U.S.C. § 103 as being unpatentable over Smith in view Schuchman et al. Schuchman et al discloses an anti multipath system which uses block coding and frequency hopping. The blocks of 1024 are sent in 2 milliseconds which gives about one microsecond for each symbol (col. 7). At the assumed  $10\mu$  second multipath delay difference (col. 6) this gives a reciprocal of the bit rate as claimed by applicants.

At the 60 megahertz bandwidth used a carrier frequency of at least 10 GHZ would need to be used. Schuchman is for digital audio but the type of information in unimportant once it is digitized. Smith has an antimultipath system with computers and transceivers powered by the computers. In view of the teachings by Schuchman in column one to overcome fading and multipath distortion it would have been obvious to one of ordinary skill in the art to use the modulation scheme of Schuchman in Smith.

Smith has the sounding of claims 3, 9 and 17. Schuchman has an ensemble of carriers (33) as in claims 5, 11, 15 and 19; QPSK as in claims 6, 7, 12, 13, 20 and 21.

G. Claims 4, 10 and 18 are rejected under 35 U.S.C. § 103 as being unpatentable over Smith and Schuchman as applied to claims 1-3, 8, 9, 14 and 17 above, and further in view of Furuya et al. Furuya discloses sending information in packets. The blocks of Schuchman are probably packets anyway but Furuya teaches using

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packets as such so that definite blocks are available for error checking etc. In view of the error checking ability of Furuya it would have been obvious to send the data of Schuchman in packets.

H. Claim 16 is rejected under 35 U.S.C. § 103 as being unpatentable over Smith and Schuchman as applied to claim 15 above, and further in view of Cutter. Cutter has Fourier transformers and detransformers for a carrier ensemble (205-208) Cutter that his Fourier Transform method reduces errors, see abstract. If one of ordinary skill in the art needed further error reduction in Schuchman they would have found it obvious to use transform encoding as taught by Cutter.

- I. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- J. Any inquiry concerning this communication or earlier communications from the examiner should be directed to B. V. Safourek whose telephone number is (703) 305-4364.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4750.

B. V. Safourek/skf December 22, 1994

BENEDICT V. SAFOUREK PRIMARY EXAMINER GROUP 263

Benedict V Supurel